Connecticut Rive t Hartford.

	Avg. discharge in cu. ft. per sec. for lowest 4 weeks period.
Sept. 9—Oct. 6, 1871..	6200
Feb. 11—Mar. 9, 1872.	7330
Aug. 25—Sept. 21, 1873	6090
Oct. 24—Nov. 20, 1874	6020
Jan. 6—Feb. 2, 1875	6330
Aug. 11—Sept. 7, 1876	5900
Jan. 1—Jan. 28, 1877	6490
Sept. 25—Oct. 22, 1878	6280
Oct. 5—Nov. 1. 1879	6350
Sept. 30—Oct. 27, 1880	6020
Sept. 22—Oct. 19, 1881	6270
Sept. 8—Oct. 5, 1884	5960
Sept. 17—Oct. 14, 1885	7320

Connecticut River at Holyoke.

	Avg. discharge in cu. ft. per sec. for lowest 4 weeks period.
Aug. 22—Sept. 8, 1880	1620
Sept. 19—Oct. 16, 1881	2510
Aug. 20—Sept. 16, 1882	2470
Sept. 2—Sept. 29, 1883	1890
Sept. 7—Oct. 4, 1884	2550
Feb. 28—Mar. 27, 1885	4690
Aug. 27—Sept. 24, 1886	2310
Sept. 23—Oct. 20, 1887	3930
July 16—Aug. 12, 1888	3290
Aug. 21—Sept. 17, 1889	3640
July 26—Aug. 22, 1890	3500
Sept. 23—Oct. 20, 1891	2740
Sept. 10—Oct. 7, 1892	4520
Jan. 12—Feb. 8, 1893	2970
Aug. 19—Sept. 15, 1894	1800

In these figures no change for the worse appears in the dry weather flow; in fact, the Holyoke diagram displays a general improvement from 1880 to 1893. It is true that this improvement may have been due to increased reservoir facilities on the tributaries of the main river, the artificial control thus exercised over the stream tending to modify and disguise all natural changes so as to increase the difficulty of drawing accurate conclusions.

Even though an unfavorable change were apparent in the lower water volume, it would be necessary, before assigning a cause for it, to study the rainfall of the basin for the period in question and to consider what the probable influence of that had been; but, as it is, such a study seems unnecessary and my general conclusion is, that so far as the flow of the lower river is concerned, no permanent change for the worse in the past twenty-five years is apparent. In closing I desire to express my indebtedness to Mr. F. H. Newell, Secretary of this Association, for placing at my disposal valuable data regarding the discharge of the Connecticut river; and to call attention to the importance of the work being done by the United States Geological Survey in attempting to obtain continuous records of the flow of many of the rivers of this country.

Dwight Porter.
Massachusetts Institute of Technology, Boston.

AMERICAN AMBER-PRODUCING TREE.

The world's supply of amber in all ages appears to have been drawn from the shores of the Baltic, where it is still mined or cast up by the waves in commercial quantities. Amber occurs also in numerous inland localities throughout Europe, as in the vicinity of Basle, Switzerland, and in France and England. It is also found on the coasts of Sicily and the Adriatic.

Up to the present time amber has not been found in North America in commercial quantities, although it is known from a number of widely scattered localities. It appears to have been first reported by Dr. G. Troost from Cape Sable, Magothey River, Maryland, in 1821. * It has also been found in small quantities near Cañon Diablo, Arizona; near the Black Hills, in South Dakota; Gay Head, on Martha's Vineyard; Trenton and Camden, New Jersey; Chesapeake and Delaware Canal, and a number of more or less doubtful localities.

The Cape Sable locality has been visited several times recently by Mr. Arthur Bibbins, instructor in geology in the Woman's College of Baltimore, and a careful search made for the amber.

This place is somewhat difficult of access from Baltimore, and the visits to it were made possible by the courtesy of Dr. W. L.

* Am. Journ. Sci., Vol. III. 1821. pp. 8–15.

Rasin, of Baltimore, who placed his commodious tug at Mr. Bibbins' disposal for the investigation.

A number of small pieces of amber were found *in situ* in thin strata composed largely of comminuted lignite. By careful excavation Mr. Bibbins was able to expose a log of lignite which showed in several cases the amber in its interstices. Through the kindness of Mr. Bibbins I have been enabled to investigate the structure of this amber-producing tree.

This log was found about 20 feet below the surface in strata provisionally regarded by Mr. Bibbins as of upper Potomac (upper part of Lower Cretaceous) age. About 4 feet in length of the log was taken out. It was very soft when excavated and hardly to be distinguished from the surrounding matrix. When dried by exposure to the air it becomes thoroughly disintegrated into minute fragments, and even when treated by hardening substances still retains so much iron pyrites that it appears impossible to stop its reduction to powder. Before fossilization the log had been completely honeycombed, apparently by a Teredo-like mollusk. This condition made its compression easy, and when excavated it was found to be much flattened. It was about 14 inches in long, and 6 inches in short diameter.

When observed with the naked eye or with a low-power lens the wood appears to be admirably preserved. The grain shows very clearly and, when it is split radially, faint traces of the medullary rays can be made out. It is very soft and may be sliced with an ordinary razor without treatment of any kind. But when studied under a compound microscope it is found at once that much disintegration and distortion has taken place. The wood cells have been flattened and crushed until it is quite impossible to make out their character. Figure 1, magnified 320 diameters, represents the lumen of the cells. It is impossible to make out their outline or to determine whether or not there were rings of growth.

FIG. 1.

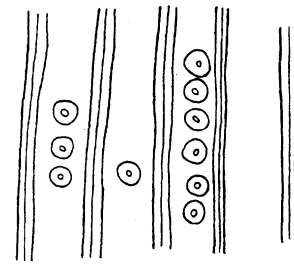

FIG. 2.

The radial section appears the best preserved of all. An exceptionally well preserved portion is shown in figure 2. It shows the cell walls to be thick, and also that the radial walls are provided with a single series of large pits. The outlines of the outer and inner circles are so obscure that it is not possible to make satisfactory measurements. (In the drawing they of course appear distinct, but they are only approximate.) The medullary rays should be observed in longitudinal section, but they can not be made out with sufficient distinctness to be drawn with the camera. The usual number appears to be four, but it may vary from two or three to as many as seven.

The tangential section, of which a fragment is given in figure 3, shows the extent

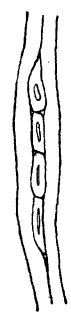

FIG. 3.

FIG. 4.

to which the medullary rays have been compressed. The opposite walls are pressed

closely together. As stated above, the usual number appears to be four.

Scattered in numerous places among the wood cells are little opaque spheres of an intensely black substance (shown in figure 4) which is probably amber. Two contiguous cells split apart and in the interval the spheres or drops occur. This intimate association of these, as well as that of the undoubted pieces of amber, leave no doubt that they are found in connection with the tree which produced them.

This amber-producing tree was of course coniferous, but the poor state of preservation renders its generic determination more or less open to question. The Baltic amber-producing trees, of which some six species are known from studies of the internal structure, were pines (Pinites), but no evidence could be found to show that the one under discussion belonged to this group. Indeed, it is hardly to be expected that the genus would have had the same peculiarities from the lower cretaceous to the oligocene, the age to which the Baltic amber belongs. The large resin tubes and compound medullary rays are characters of the pine group, but are absent in this. On the other hand, as nearly as can be made out, the structure is that of Sequoia or Cupressinoxylon as the wood is known in the fossil state. It is very much like certain lignites that have been described from the Potomac formation, but of which too little is still known. This view is further strengthened when it is remembered that some fifteen species of Sequoia are already known, from the researches of Fontaine, to have lived during Potomac times.

I venture to propose for this American amber-producing tree the provisional name of *Cupressinoxylon? Bibbinsi*, in honor of the collector, who has done so much to elucidate the complex history of the Potomac formation and its vegetation.

F. H. Knowlton.
U. S. National Museum, Washington, D. C.

*ZOÖLOGICAL NOMENCLATURE--A PROPOSAL.**

The discussion on zoölogical nomenclature, which was held, as announced in our last number, by the Zoölogical Society of London on March 3d, was introduced to a crowded meeting by Mr. P. L. Sclater, F. R. S., in a concise and careful paper, and the points to which he drew attention were warmly debated beyond the usual hour. The discussion dealt with certain differences between the rules drawn up by the German Zoölogical Society for the guidance of the compilers of the Synopsis of the Animal Kingdom ('Das Tierreich') which that Society is preparing, and the rules known as the Stricklandian Code, which for many years governed, or were supposed to govern, the usage of British naturalists. The discussion turned chiefly upon the following questions: First, may the same generic names ever be used for both animals and plants? Secondly, may the same term be used for the generic and trivial name of a species, as in the well-known instance of *Scomber scomber?* Thirdly, are we to adopt as our starting point the tenth edition of Linné's *Systema Naturæ* in preference to the twelfth edition? These questions are answered in the affirmative by the German code, and in the negative by the original Stricklandian. We do not propose to discuss them here: it is natural that there should still be found, especially among the older zoölogists of this country, many to support the old-established British practices; in this, as in all other matters of nomenclature, convenience, not principle, is concerned, and it cannot be gainsaid that the general usage of zoölogists, at all events in other parts of the world, becomes daily more and more in harmony with the rules adopted by the German Society.

Were we again to open our pages to the discussion of this thorny subject, we should

*From proof sheets of an editorial article in *Natural Science.*